



Appl. No. 09/964,927
Attorney Docket No. 027-040001US
Response to Restriction Requirement dated 19 November 2004

Express Mail No. ER 830 250 397 US

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/964,927 Confirmation No. : 2183
Applicants : MCCARTHY, Wil Art Unit : 2874
SNYDER, Gary E.
Filed : 26 SEPTEMBER 2001 Examiner : Daniel J. Petkovsek
Title : Fiber incorporating quantum dots as programmable dopants
Docket No. : 027-040001US
Customer No. : 33486

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO RESTRICTION REQUIREMENT

Sir:

This letter is in response to an Office action dated 19 November 2004 wherein restriction of the claims under 35 U.S.C. § 121 is required.

The Office action contends the claims presently under consideration in the application are directed to three distinct inventions identified as follows:

- I. Claims 1-6 and 9-25 directed to a quantum dot fiber;
 - II. Claims 7, 8, and 26 directed to a method for controlling dopants in a bulk material;
- and
- III. Claim 27 directed to a bulk material device with artificial atoms.

Pursuant to 37 C.F. R. § 1.142, Applicants elect for prosecution claims directed to the claims grouped in the Office action as Invention I and therefore withdraw claims 7, 8, 26, and 27 from further consideration at this time. Pursuant to 37 C.F.R. § 1.142, Applicants reserve the right to request reinstatement of these claims in the event that the restriction requirement is later withdrawn.

In the Office action, the examiner identifies separate search classifications of the various groups of claims. Claims 1-6 and 9-25 were correlated with class 385, subclass 123 for optical

fiber wave guides with cladding. Claims 7, 8, and 26 were correlated with class 438, subclass 548 for semi-conductor device manufacturing processes involving plural dopants simultaneously provided in plural regions. Claim 27 was correlated with class 257, subclass 1 for a bulk effect active solid state device (e.g., transistors and solid state diodes). Applicants submit that these classifications do not accurately represent the subject matter of the invention and suggest that the examiner reassess this determination.

In particular, class 385 for optical wave guides is at best tangential to the focus of the present invention. The present invention is directed to the arrangement and effect of quantum dots placed in a fiber material, wherein the energy confined in the quantum dots can be controlled. Although some of the dependent claims (e.g., claim 3) state that the claimed control paths may be optical fibers, they need not be. Classes 438 and 257 are more closely related to the present invention. However, the present invention is not directed to what are traditionally recognized as solid state devices. Quantum dots do not function as transistors or diodes, for example. They are nanoscale structures that, in the present invention, create doping effects. Applicants suggest that a more appropriate classification for all of the inventions should be in the new class 977 for nanotechnology.

Applicants request substantive examination of the elected claims in due course.

Respectfully submitted this 8th day of December 2004.



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First Applicant : Wil McCarthy et al. Art Unit : 2874
Filed : 26 September 2001 Examiner : D.J. Petkovsek
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CERTIFICATE OF MAILING BY EXPRESS MAIL

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

The undersigned hereby certifies that the attached:

1. Response to Restriction Requirement (2 pages);
2. Certificate of Mailing by express mail; and
3. Return postcard,

all relating to the above application were deposited as "Express Mail", using the mailing label number noted in the header above, with the United States Postal Service, addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on **08 December 2004**.

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